Claims

What is claimed is:

1. A device for collecting data on small-arms usage, comprising:

A means to sense that a shot has been fired from a gun using its acceleration, acoustic noise, barrel expansion, heat, light, gas pressure, bolt movement, or RF emissions;

A means to measure the time interval between shots so that the firing rate may be determined; and

A means to measure the temperature of the barrel as each shot, or group of shots, is fired.

2. The device of claim 1 that records the interval between the firing of shots.

3. The device of claim 1 that measures and records the temperature of the barrel as each shot is fired;

4. The device of claim 1 that stores any combination of temperature, firing rate and firing interval for subsequent analysis.

5. The device of claim 1 that provides an interface to transfer data from the device to a computer or other data collection device.

6. The device of claim 1 that records the shot interval and temperature data in a statistical histogram format.

7. The device of claim 1 that records the date and time that each shot was fired.

8. The device of claim 1 where data can be recorded in non-volatile memory.

9. The device of claim 1 where details regarding the specific weapon, including serial number, barrel number, model number and last date of service, can be recorded in non-volatile memory.

10. A computing device programmed to retrieve data from a device that collects data on small-arms usage.

11. The device of claim 10 that displays firing rate, interval or temperature data retrieved from a small-arms data collection device in a histogram format.

12. The device of claim 10 that is programmed to save data retrieved from a small-arms data collection device in a retrievable file.

13. The device of claim 10 that is programmed to display data retrieved from a small-arms data collection device including the gun's serial number, barrel number, model number, and date of last maintenance.

14. The device of claim 10 that is programmed to transfer data retrieved from a small-arms data collection device to another computer using a data interface.

15. An electronic system for collecting data from small-arms that has a programmable threshold level for distinguishing between signals resulting from shots fired and from other external sources.

16. The electronic system of claim 15 that includes at least one means to supply an electrical signal to a processor when a shot is fired.

17. The electronic system of claim 16 wherein said at least one supply means is an accelerometer.

18. The electronic system of claim 16 wherein said at least one supply means is an inertial switch.

19. The electronic system of claim 16 wherein said at least one supply means is an RF detector.

20. The electronic system of claim 16 wherein said at least one supply means is a microphone.

21. The electronic system of claim 16 wherein said at least one supply means is a Hall-effect device.

22. The electronic system of claim 15 that includes a programmable hold-off period so that all signals received by the processor during said hold-off period are rejected.

23. The electronic system of claim 15 whose processor goes into a low-power, sleep-mode after a programmable interval has passed with no shots detected.

24. The electronic system of claim 15 that powers op-amps only during specific measurement periods thereby reducing power consumption.

25. The electronic system of claim 15 that measures barrel temperature using a thermocouple in contact with the barrel.

26. The electronic system of claim 15 that measures barrel temperature using an infrared detector.

27. The electronic system of claim 15 that records the interval between the firing of shots.

28. The electronic system of claim 15 that measures and records the temperature of the barrel as each shot is fired;

29. The electronic system of claim 15 that stores any combination of temperature, firing rate and firing interval for subsequent analysis.

30. The electronic system of claim 15 that provides an interface to transfer data from the device to a computer or other data collection device.

31. The electronic system of claim 15 that records the shot interval and temperature data in a statistical format.

32. The electronic system of claim 31 wherein said statistical format is a histogram.

32. The electronic system of claim 15 that records the date and time that each shot was fired.

33. The electronic system of claim 15 where data can be recorded in non-volatile memory.

34. The electronic system of claim 15 where details regarding the specific weapon, including serial number, barrel number, model number and last date of service, can be recorded in non-volatile memory.